THE UTILIZATION OF ERTS-1 GENERATED PHOTOGRAPHS IN THE EVALUATION OF THE IRANIAN PLAYAS AS POTENTIAL LOCATIONS FOR ECONOMIC AND ENGINEERING DEVELOPMENT

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16. Abstracts

Ground truth studies were conducted at several Iranian playas during the period 8-24 September 1972. Several hundred ground photos in color and black and white were taken within 3 days to 2 weeks of the overhead passing of ERTS-1, and 67 soil, salt and water samples were collected and are now being analyzed. Depth to ground water and surface strength of playa soils were measured at the principal playas, at the height of the dry season, in order to relate these to seasonal tonal differences in the September ERTS photos and in subsequent ERTS photos.

Photo maps at 1:250,000 scale are soon to be prepared by U.S.G.S. from 9 inch ERTS negatives. These will provide suitable bases for overlays of the playa seasonal maps. The photo maps, prepared from the September photography, will reflect the height of the dry season. Subsequent photos will reflect wetter playa conditions and the growth of wet zones and playa lakes. These conditions will manefest themselves by a reduction in playa soil strength and by the partial solution of inundated salt crusts.

17. Key Words and Document Analysis. (a). Descriptors

Iranian playas
dry lakes
salt flats
clay flats

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a. Title: The Utilization of ERTS-1 Generated Photographs in the Evaluation of the Iranian Playas as Potential Locations for Economic and Engineering Development

ERTS-1 Proposal No.: SR 195

b. GSFC ID No. of P.I.: IN 037

c. Problems that are impeding the progress of the investigation:

1. Diffraction patterns on many 70 mm positives.

2. Color composites are required in this study, and they have not been available.

3. Some scenes have split images making resolution of the composites difficult.

4. There is difficulty in superposing the 7 band in some scenes.

d. Accomplishments during the reporting period:

The principal objectives of the reporting period were the establishment of ground truth measurements which could then be related to the ERTS-1 photos. The ground truth studies that were made in Iran, during September, coincided with the height of the dry season. The playa soils were at maximum seasonal strength, and water tables were lowest. Actual soil strength was measured on dry clay flats and these measurements will be related to tonal differences in the ERTS-1 photos, if possible. Salt samples were collected from all salt crusts for analysis, and these in turn will be examined in the photos for tonal differences.

Activities planned for the next reporting period:

ERTS-1 photos of the Iranian playas during April-May will reflect maximum wet conditions, and the growth of wet zones and playa lakes. The actual dynamic changes that occur in playas can be measured and studied. Ground-truth studies during the wet period can provide confirmation for the photo analysis.

e. There are no scientific results at this time.

f. No papers have been published to date.

g. Recommendations:

There is an obvious need for a good optical system that will enable the P.I. to both copy and photograph large scale magnification of his 70 mm film chips singly or in color composite. The I^2 system loses registration during filter manipulation and is not suitable for convenient copy work nor sharp enough for photography.

h. N.A. at this time.

i. No forms have been received

j. N.A.